

## ABSTRACT OF THE DISCLOSURE

A nuclear detection and measurement system is provided having an ionization chamber with the ionization chamber having enclosed therein a balanced electrometer. The system includes a housing enclosing the ionization chamber, 5 with the housing also enclosing circuitry, a battery, a power source, a microprocessor, and an analog section. The analog section is intermediate and connected by circuitry to the ionization chamber and the microprocessor. The housing has a display panel, and an on/off switch, with the 10 circuitry connecting the power supply to the battery, the on/off switch, the microprocessor, and the display panel. The housing also includes a wireless link, a GPS unit, an RS232 port, a USB port, an alarm, and a battery charger. There is a handle secured to the housing, with the housing 15 having on its exterior a plurality of connections for the RS232 port, the USB port, and the battery charger, and a point of attachment for a bar code reader. In another embodiment, the ionization chamber encloses a second ionization chamber, with the second ionization chamber 20 having enclosed therein a second electrometer.